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Franz Hauner

GLN-049US

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7590

04/02/2008

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EXAMINER

SYKES, ALTREV C

ART UNIT

PAPER NUMBER

4145

MAIL DATE

DELIVERY MODE

04/02/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/508,896 | <b>Applicant(s)</b><br>HAUNER ET AL. |  |
|                              | <b>Examiner</b><br>ALTREV C. SYKES   | <b>Art Unit</b><br>4145              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20041206</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed December 06, 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the following information referred to therein has not been considered: all 4 Foreign Patent Documents in addition to the 1 Non Patent Literature Document, since applicant has not provided copies of said documents.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it is not understood what is being claimed by applicant in regards to “at least two tubes made of powder consisting of the desired materials respectively”. For examination purposes at this time, the claim is treated on the merits with the “desired materials” being any powder.

The term "high electrical resistance" in claims 3, 5, 6-8, 10, and 11 is a relative term which renders the claim indefinite. The term "high electrical resistance" is not defined by the claim, the specification does not provide a standard for ascertaining the

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requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. As such it is noted that any silver alloy would encompass this property.

The term "high mechanical resistance" in claims 4, 5, 6-9, and 11 is a relative term which renders the claim indefinite. The term "high mechanical resistance" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. As such it is noted that any silver alloy would encompass this property.

***Claim Rejections - 35 USC § 102 or 35 USC § 103***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. (US 5,338,721)

Regarding claim 2, Yamamoto et al. discloses a sheath for a high-temperature multifilament superconducting cable, characterized in that it consists of a tube whose wall comprises, (See Col 4, lines 27-34)

- these being diffusion-bonded together: (See any known technique in Col 6, lines 18-22)
- an inner layer of pure silver; (See metal pipe in Col 5, lines 40-45)
- and at least one second layer of silver-based alloy. (See intermediate layer in Col 6, lines 1-9)

Absent a showing to the contrary, it is noted that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art. In

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the instant case, Yamamoto et al. discloses that the layer of compound oxide type superconductor may be preferably deposited by sputtering technique. (See Col 5, lines 45-48) Additionally, Yamamoto et al. discloses that the intermediate layer may be produced by any known technique such as vacuum-deposition, sputtering, plating, coating or cladding technique in which a precious metal pipe is lined on the inner surface of the outer metal pipe. (See Col 6, lines 18-22)

7. Claim 2, 3, 9, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, 35 U.S.C. 103(a) as being unpatentable over Balachandran et al. (US 5,874,384).

Balachandran et al. discloses a sheath characterized in that the wall of the tube is formed from,

- an inner layer of pure silver; (See innertube ref.11, Figure 1)
  - and at least one second layer of silver-based alloy. (See sheath ref. 13, Figure 1)
- at least two layers:
  - an inner layer of pure silver; (See innertube ref.11, Figure 1)
  - and an outer layer of a silver alloy of high electrical resistance. (See sheath ref. 13, Figure 1)
- two layers,
  - an inner layer (32) of pure silver; (See innertube ref.11, Figure 1)
  - an outer layer (34) of a silver alloy of high mechanical strength. (See sheath ref. 13, Figure 1)

- two layers:
  - an inner layer (32) of pure silver; (See innertube ref.11, Figure 1)
  - an outer layer (34) of a silver alloy of high mechanical strength and high electrical resistance. (See sheath ref. 13, Figure 1)

Absent a showing to the contrary, it is noted that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art. In the instant case, Balachandran et al. discloses a method of making the sheath product wherein the wire-in tube (WIT) process is used with freeze dried superconductor powder particles instead of the normal superconductor powder particles as with the powder-in tube (PIT) process.

8. Claims 4-6, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 5,276,281).

Regarding claims 4-6 and 11 Sato et al. discloses a superconducting conductor which has an excellent repeated temperature property with no reduction of critical current density against a temperature change. (See Col 1, lines 37-40)

Additionally, Sato et al. discloses:

- three layers:
  - an inner layer (16) of pure silver; (See support member in Col 1, lines 40-57)
  - an intermediate layer (18) of a silver alloy of high mechanical strength; (See metallic coating in Col 1, lines 67-68 and Col 2, lines 1-9)
  - and an outer layer (20) of pure silver. (See metal sheath in Col 2, lines 49-51)
- three layers:
  - an inner layer (16) of pure silver; (See support member in Col 1, lines 40-57)
  - an intermediate layer (18) of a silver alloy of high mechanical strength and high electrical resistance; (See metallic coating in Col 1, lines 67-68 and Col 2, lines 1-9)
  - and an outer layer (20) of pure silver. (See metal sheath in Col 2, lines 49-51)



- three layers:
  - an inner layer (16) of pure silver; (See support member in Col 1, lines 40-57)
  - an intermediate layer (18) of a silver alloy of high mechanical strength; (See metallic coating in Col 1, lines 67-68 and Col 2, lines 1-9)
- and an outer layer (20) of silver of high electrical resistance. (See metal sheath in Col 2, lines 49-51)
- three layers:
  - an inner layer (36) of pure silver; (See support member in Col 1, lines 40-57)
  - an intermediate layer (38) of a silver alloy of high electrical resistance; (See metallic coating in Col 1, lines 67-68 and Col 2, lines 1-9)
  - and an outer layer (40) of a silver alloy of high mechanical strength. (See metal sheath in Col 2, lines 49-51)

Absent a showing to the contrary, it is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the

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applicant to show unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art. In the instant case, Sato et al. discloses a method of making the sheath product wherein the oxide superconductor and the support member can be composed with each other by a mechanical or physical method such as taping, bonding with an adhesive agent, or diffused bonding. (See Col 2, lines 10-14)

9. Claims 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, 35 U.S.C. 103(a) as being unpatentable over Donadieu et al. (US 3,349,169).

Donadieu et al. discloses a an electric cable having a central superconducting conductor and at least one helical or braided sheath of conductive material covering said central conductor characterized in that the wall of the tube is formed from, (See Abstract)

- four layers,
  - an inner layer (22) of pure silver; (See first sheath, ref. 6, Figure 7)
  - a first intermediate layer (24) of a silver alloy of high mechanical strength; (See second sheath, ref. 7, Figure 7)

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- a second intermediate layer (26) of a silver alloy of high electrical resistance; (See sheath, ref. 8, Figure 7)
- and an outer layer (28) of pure silver. (See sheath, ref. 9, Figure 7)
- four layers,
  - an inner layer (22) of pure silver; (See first sheath, ref. 6, Figure 7)
  - a first intermediate layer (24) of a silver alloy of high electrical resistance; (See sheath, ref. 7, Figure 7)
  - a second intermediate layer (26) of a silver alloy of high mechanical strength; (See sheath, ref. 8, Figure 7)
  - and an outer layer (28) of pure silver. (See sheath, ref. 9, Figure 7)

Absent a showing to the contrary, it is the examiner's position that the article of the applied prior art is identical to or only slightly different than the claimed article. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). The applied prior art either anticipated or strongly suggested the claimed subject matter. It is noted that if the

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applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with the applied prior art. In the instant case, Sato et al. discloses a method of making the sheath product wherein the sheath may be formed by helically wound bundles of thin wires made of metal. (See Col 3, lines 9-16)

***Claim Rejections - 35 USC § 103***

10. The text of those sections of Title 35, U.S. Code is included above.
11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
  1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
12. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. . (US 5,338,721) in view of Gunzelmann et al. (US 5,100,867)

Regarding claim 1, Yamamoto et al. discloses a process for manufacturing a sheath for a high-temperature multifilament superconducting cable, (See Col 1, lines 10-15) characterized by the steps comprising preparing at least one of material powders selected from a group comprising (i) a powder mixture of compounds each containing at least one of constituent elements of the compound oxide and (ii) a sintered powder of

compound oxide prepared by sintering the powder mixture of (i) and then by pulverizing obtained sintered body, compacting the material powder in a metal pipe made of at least one of metals selected from a group comprising gold, silver and platinum metals and their alloys, and then heating the metal pipe filled with the material powder at a temperature in the ranging between an upper limit corresponding to the lowest melting point of any of constituent components in the material powder and a lower limit which is lower by 100 °C than said upper limit to sinter said material powder inside the outer metal pipe. (See Col 5, lines 1-16) Yamamoto et al. discloses each of the compounds may be an oxide powder or a carbonate powder of constituent elements of said compound oxide. (See Col 5, lines 17-19) Yamamoto et al. further discloses the material powder may be compacted under a pressed condition and/or may be granulated previously. (See Col 5, lines 24-25) Wire-drawing may be performed during or after the sintering operation. (See Col 5, lines 25-26) As Yamamoto et al. discloses all of the limitations as set forth above, the reference does not disclose cold isostatic pressing.

Gunzlemann et al. discloses a method for manufacturing wires or strips from high-temperature superconductors which will improve the current carrying capacity of the wires and/or strips that are produced. (See Col 1, lines 1-13 and 42-45) The process steps include isostatic compressing wherein the powder is compacted and a blank is produced, the blank is extruded at a temperature of  $\geq 500$  °C in a metallic encasing member, and subsequently the extruded blank is processed further into a wire or strip. (See Col 1, lines 46-54) The isostatic compressing can be carried out in a cold isostatic process. (See Col 1, lines 57-60) It is noted by the examiner that the wire-drawing of

Yamamoto et al. would provide for the same forcibly stretched product as that of the extrusion process of Gunzlemann et al.

As Yamamoto et al. and Gunzlemann et al. aim to provide a method of making a sheath that would protect the superconductor from high temperatures, the art is analogous. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the cold isostatic compressing of Gunzlemann in the compacted pressing condition of Yamamoto et al. in order to produce a superconducting composite having increased current carrying capacity.(See Col 2, lines 4-7)

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

### ***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALTREV C. SYKES whose telephone number is (571)270-3162. The examiner can normally be reached on Monday-Thursday, 7:30AM-5PM EST, alt Friday. If attempts to reach the examiner by telephone are unsuccessful,

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the examiner's supervisor, Basia Ridley can be reached on 571-272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ACS/  
3/17/08

/Basia Ridley/  
Supervisory Patent Examiner, Art Unit 4145